

CLAIMS:

1. Display device, comprising:

- a display screen (130) for displaying image information, said display screen (130) comprising a first array of picture elements (135);
- cathode means (120) for emitting electrons and
- 5 – a number of electron concentrators (115) for collecting the electrons, an electron concentrator (115) having an exit aperture (117) for releasing an electron beam (EB) impinging on a picture element (135) of the display screen (130),

characterized in that

- the first array comprises a predetermined number of sub-arrays (132), a sub-array (132) comprising at least two of the picture elements (135),
- 10 – a single electron concentrator (115) is associated with a single sub-array (132), so that the number of the electron concentrators (115) matches the number of the sub-arrays (132), and
- the display device comprises selection means (140) for deflecting the electron beam (EB)
- 15 to one of the picture elements (135) within the sub-array (132).

2. Display device as claimed in Claim 1, characterized in that the electron concentrator (115) comprises the selection means (140).

- 20 3. Display device as claimed in Claim 1, characterized in that the electron concentrator (115) comprises an electron beam guidance cavity being provided with secondary emission material and having an entrance (116) being larger than the exit aperture (117), a hop electrode (112) being arranged near said exit aperture (117) for enabling a hopping transport of the electrons to said exit aperture (117).

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4. Display device as claimed in Claim 4, characterized in that a ratio between a surface area of the entrance (116) and a surface area of the exit aperture (117) is at least 10:1.

5. Display device as claimed in Claim 2 and 3, characterized in that the selection means (140) comprise an outer electrode (114) arranged substantially outside the hop electrode (112), said outer electrode (114) having at least two segments on opposing sides of the exit aperture (117), between which segments a deflection voltage is applied for deflecting the electron beam (EB).

6. Display device as claimed in Claim 5, characterized in that a sub-array comprises an even number of picture elements, a center of the sub-array being aligned with a main axis of the electron beam guidance cavity.

7. Display device as claimed in Claim 1, characterized in that a sub-array comprises three picture elements (135R,G,B) corresponding to primary phosphor colors of the display screen (130).

8. Display device as claimed in Claim 1, characterized in that cathode means (120) comprises a field emitter (224).